

Emotional intelligence levels in baccalaureate-prepared early career registered nurses

Glenda S. Reemts

Division of Nursing, University of Mary, Bismarck, ND, USA

Corresponding author: Glenda S. Reemts

E-mail: greemts@umary.edu

Received: November 13, 2014, Revised: January 03, 2015

ABSTRACT

Objective: The increasing complexity of the healthcare environment calls for increasing emotional intelligence (EI) competence in nurses. This study assessed the EI competence of 164 baccalaureate nursing alumni who graduated during the years 2007-2010 from three Benedictine institutions located in the Midwestern United States to see if there was growth of EI with experience as a registered nurse (RN), and to determine if age, gender, grade point average (GPA), and years of total healthcare work experience prior to graduation predicted EI. **Methods:** Participants completed the web-based Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and a demographic survey. **Results:** Findings indicated 79.4% of participants were competent or higher on the MSCEIT total EI score. Percentages of nurses scoring in the competent or higher range on each of the four branch scores of perceiving,

using, understanding and managing emotions were 80.6%, 72.7%, 84.2%, and 84.9% respectively. There were no significant differences on EI scores between graduates with 1-2 years compared to 3-5 years of experience as a RN. Results of a linear stepwise regression indicated being female was a significant predictor on the MSCEIT total EI score ($P = 0.015$) and using emotions branch ($P = 0.047$). Findings also indicated GPA ($P < 0.001$) and being female ($P = 0.023$) were significant predictors of EI on the understanding emotions branch. **Conclusions:** The findings indicate there is work to be done to improve the EI competence of nursing graduates. Continued research on the topic of EI and nursing is needed to build the knowledge base on how to promote positive patient outcomes.

Key words: Emotional intelligence, nursing, education

Introduction

Increasingly, the healthcare environment is being affected by many forces that influence nursing education. The Institute of Medicine (IOM) report, *The future of nursing: leading change, advancing health* recommends that nurses expand opportunities that transform healthcare.^[1] Specifically, nursing education programs are called to prepare graduates

with skills to lead across all levels.^[1] Nurses must be excellent change agents^[2] prepared to deliver safe, quality patient-centered care.^[1] The implementation of new delivery models, downsizing of the available professional nursing workforce, increased patient acuity levels with decreased lengths of stay, and rapidly changing technology creates stressful working environments for nurses and challenges efforts to prepare new graduates to meet the expectations outlined in the IOM report.^[2]

The profession of nursing deals with human relationships, which often leads to conflict in stressful healthcare environments.^[3] Nursing literature is emerging that links emotional intelligence (EI) with the ability to cope with stress,^[4,5] manage conflict^[3] and effectively lead.^[6] EI competencies are essential components of professional

Access this article online

Quick Response Code:



Website: www.apjon.org

DOI:
10.4103/2347-5625.157573

nursing practice and include the ability to demonstrate empathy and self-awareness, along with motivating others, and demonstrating excellent interpersonal skills.^[7] EI competencies are also crucial for nurses in managing emotions while working with multidisciplinary teams needed to advance clinical practice and improve client outcomes.^[8]

Nurses, to a greater extent than any other member of the healthcare team, are in a position to consider all needs of the patient; therefore, high levels of EI become critical for establishing effective relationships that contribute to quality of care.^[9] Every nursing practice intervention calls for the integration of EI hence EI has been regarded as the “heart of the art” of the profession.^[10] EI competence has been identified by both new nursing student graduates and their supervisors as necessary for optimal nursing practice.^[11] Nurses with high EI levels have an awareness of their own emotions and which equips them to provide improved patient care through managing emotional demands in practice settings.^[8] The patient or client holds top priority, and effective nursing care is delivered in such a manner that patients feel respected and are treated with dignity.^[12]

Connections between EI and increased nursing performance levels have been reported with emphasis on the importance of cultivating a caring and respectful environment that supports effective communication and strong interpersonal relationship connections.^[13] Professionalism is rooted in caring, which also promotes participation in relationships to meet quality patient outcomes.^[6,14] When nurses capitalize on EI competencies with personal and interpersonal abilities to handle rapidly changing client care situations, are calm in the face of frustration, and are able to establish an environment that is both compassionate and healing, overall patient care improves.^[15]

The preparatory development of EI competencies in academe has been suggested.^[8,16] EI competencies foundational to nursing are also upheld in the values supported through higher education at Benedictine institutions. Benedictine values that parallel EI competencies include listening carefully and engaging in dialogue even when one disagrees.^[17] Listening also means being respectful, nonjudgmental and tolerant of differing viewpoints.^[17-19] The Rule of St. Benedict states in the prologue: “Listen with the ear of your heart” (pg. 20).^[20] The Benedictine values of respect and hospitality extended through welcoming others and recognizing each individual as unique, as well as incorporating servant leadership and developing emotional wellness are also inherent in EI.^[17-19,21] Overall competencies expected by graduates of Benedictine institutions of higher education are highly characteristic

of EI. Competences include the need to function effectively within a complex and diverse society and to communicate effectively. In addition, the ability to gather and process information to draw conclusions without bias and remain open to new options if new information becomes available are noted outcomes that mirror competencies of EI.^[17-19,21] Today’s healthcare arena calls for nurses who possess EI and competence in this area is fostered through a Benedictine collegiate experience.

The purpose of this study was to assess the EI competence of baccalaureate nursing graduates from Benedictine institutions in the Midwestern United States to see if there was growth of EI with experience, and to determine if the variables of age, gender, grade point average (GPA), and years of total healthcare work experience predicted EI. The research questions utilized for this study were as follows:

- RQ1: What is the level of EI competence on the total and each of the four branch scores of the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) among baccalaureate-prepared nurses who attended Benedictine institutions of higher education in the Midwest and graduated during the years 2007-2010?
- RQ2: Are there any differences on the total and each of the four branch scores of the MSCEIT between recent nursing graduates and those with 3-5 years of professional nursing experience in baccalaureate-prepared nurses who attended Benedictine institutions of higher education in the Midwest and graduated during the years 2007-2010?
- RQ3: Do demographics of age, gender, GPA, years of total healthcare work experience, and years of work experience as a registered nurse (RN) predict EI as identified on the total and each of the four branch scores of the MSCEIT in baccalaureate-prepared nurses who attended Benedictine institutions of higher education in the Midwest and graduated during the years 2007-2010?

Materials and Methods

The population for this study consisted of baccalaureate-prepared RNs who graduated during the years 2007-2010 from three Benedictine institutions of higher education located in the Midwestern United States. The independent variables used in this study included age, gender, GPA, years of healthcare experience prior to graduation, and years of experience as an RN. The mean age of the participants was 26 years with a range of 22-51 years [Figure 1]. Most participants were women; 14 were male and 151 were female. The self-disclosed GPA’s are reported in Figure 2. The mean for the reported number of years of total healthcare experience prior to graduation was 2.67 years. The range of experience was from 0 year of prior healthcare

experience to 11 years [Figure 3]. Years of experience as an RN are found in Figure 4.

Prior to data collection Institutional Review Board approvals were secured from the supervising university as well as from the three Benedictine institutions of higher education. To de-identify the participants, web-based surveys were utilized. The cover and consent letters and link to the online survey were E-mailed to 330 baccalaureate-prepared nursing graduates of 2007, 2008, 2009 and 2010. Participation in this study was voluntary and participants were told they could discontinue the surveys at any point in the survey process. One hundred sixty five participants completed both the MSCEIT and demographic surveys.

The instrument used to measure EI of the population for this study was the web-based MSCEIT™. The MSCEIT is an ability-based test that incorporates a variety of tasks designed to measure four branches of the EI model of Mayer and Salovey. These branches include:

1. Perceiving emotions: The ability to perceive emotions

in oneself and others as well as in objects, art, stories, music, and other stimuli.

2. Facilitating thought: The ability to generate, use, and feel emotion as necessary to communicate feelings or employ them in other cognitive processes.
3. Understanding emotions: The ability to understand emotional information, to understand how emotions combine and progress through relationship transitions, and to appreciate such emotional meanings.
4. Managing emotions: The ability to be open to feelings, and to modulate them in oneself and others so as to promote personal understanding and growth.^[22]

The 141 item MSCEIT, administered by Multi-Health Systems, Inc., takes approximately 30-45 min to complete. The guidelines for score interpretation for the total EI standard score and each of the four branch standard scores as defined by Mayer^[23] are identified in Table 1. IBM® SPSS® Student GradPack (version 18), was utilized to analyse the data.

The overall EI test score reliability is $r = 0.93$ for consensus scoring. The reliability scores for each of the branch scores

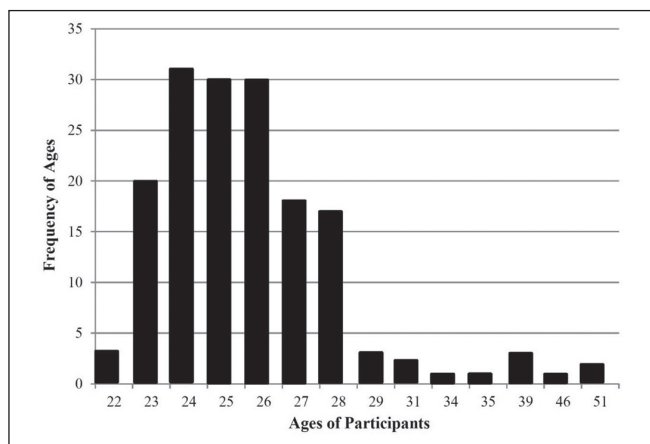


Figure 1: Age frequencies of study participants

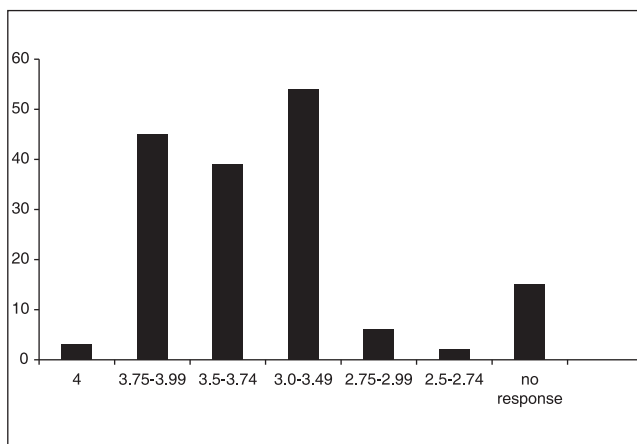


Figure 2: Grade point average frequencies of study participants

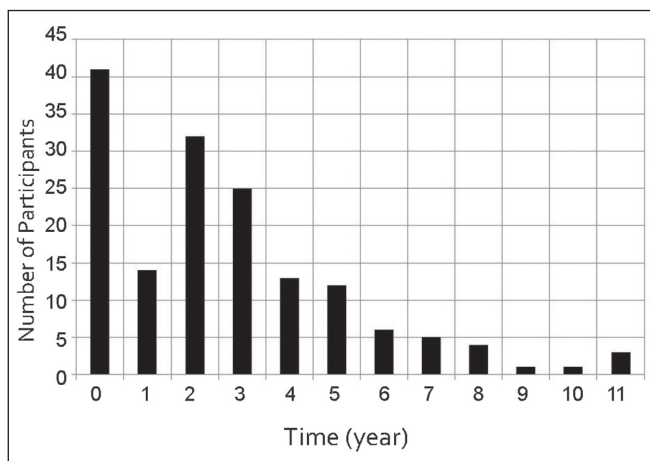


Figure 3: Years of healthcare experience of participants prior to graduation

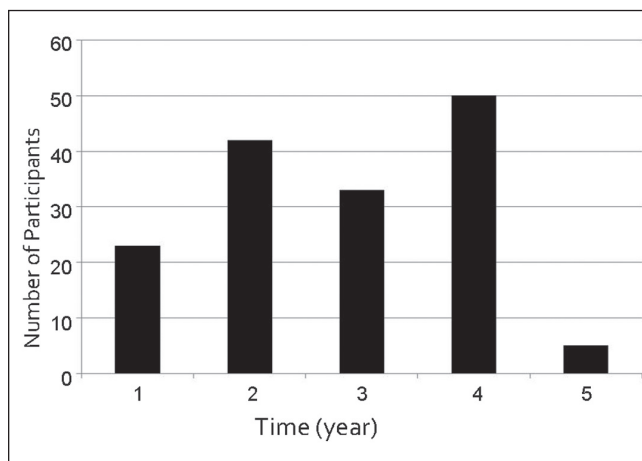


Figure 4: Years of participant's experience as a registered nurse

are: Perceiving emotion, $r = 0.9$; using emotion, $r = 0.79$; understanding emotion, $r = 0.80$; and managing emotion, $r = 0.83$.^[24] The MSCEIT was reported to have good face validity in that the test measured what was intended.^[24] In addition, the MSCEIT has been noted to possess content validity, the determination that the test items covered the four ability branches.^[24]

This study utilized a cross-sectional quantitative survey design to assess emotional competence level and compare EI scores of RNs with 1-2 years of experience following graduation with RNs who had 3-5 years of experience following graduation. Demographic data of age, gender, GPA, years of total work experience, and years of work experience as a RN were used to determine if these variables predicted EI.

Results

Research question one sought to determine the level of EI competence on the total and each of the four branch scores of the MSCEIT. Frequencies and percentages were calculated for the total standard EI score and each of the four branch standard scores of perceiving emotions, using emotions, understanding emotions, and managing emotions. The breakdown of scores for the total EI standard score and each of the four branch standard scores as defined by Mayer^[23] are listed in Table 2.

Research question two sought to answer whether there were any differences on the total and each of the four branch scores of the MSCEIT between recent nursing graduates

and those with 3-5 years of professional nursing experience. An independent-sample *t*-test was conducted to determine whether there were any statistically significant differences on the EI scores between graduates with 1-2 years of experience as an RN compared to RNs with 3-5 years of experience. This parametric test was chosen as the variances in these two groups were expected to be equal. The participants were all baccalaureate degree in nursing graduates from Benedictine institutions of higher education that had similar values and were located in the same geographic region. The graduates from the three institutions were all educated with curriculums that were nationally accredited by the Commission on Collegiate Nursing Education. Graduates with 1-2 years of experience were selected to comprise one group and graduates with 3-5 years of experience in the other. These groups were specifically chosen to determine if early professional nursing experience had any impact on EI scores and because access to one of the nursing databases was limited to the past 5 years. Levene's test did indicate that there was homogeneity of variance between the group with 1-2 years of experience and the group with 3-5 years of experience on all four branch scores as well as the total EI scores. The MSCEIT standard score descriptive statistics and mean differences for nurses with 1-2 and 3-5 years of experience are noted in Tables 3 and 4. No significant differences between these two groups were found.

Research question three addressed the demographics of age, gender, GPA, years of total healthcare work experience, and years of work experience as a RN to see if they predicted EI as identified on the total and each of the four branch scores of the MSCEIT. A linear stepwise regression method was utilized to compute whether the independent variables predicted EI. The descriptive statistics for the total and each of the four branch scores of the MSCEIT are found in Table 5.

All five independent variables were initially analysed to determine their overall association with the total EI standard score as the initial theory indicated the existence of

Table 1: MSCEIT guidelines for score interpretation

Score range	Qualitative description
0-<70	Improve
>70 and <90	Consider developing
>90 and <110	Competent
>110 and <130	Skilled
>130	Expert

MSCEIT: Mayer salovey caruso emotional intelligence test

Table 2: MSCEIT total and branch standard scores

MSCEIT branch & total scores	Score ranges				
	Improve 0-<70 (%)	Consider developing ≥ 70 and <90 (%)	Competent ≥ 90 and <110 (%)	Skilled ≥ 110 and <130 (%)	Expert ≥ 130 (%)
Branch 1 perceiving emotions	0 (0)	32 (19.4)	104 (63.0)	27 (16.4)	2 (1.2)
Branch 2 using emotions	2 (1.2)	43 (26.1)	90 (54.5)	30 (18.2)	0 (0)
Branch 3 understanding emotions	0 (0)	26 (15.8)	122 (73.9)	17 (10.3)	0 (0)
Branch 4 managing emotions	3 (1.8)	22 (13.3)	124 (75.2)	16 (9.7)	0 (0)
Total EI score	2 (1.2)	32 (19.4)	105 (63.6)	26 (15.8)	0 (0)

Number and percentage of nurses' scores in each category of the score ranges on the total EI and each of the 4 branch scores ($n = 165$) of the MSCEIT. MSCEIT: Mayer-Salovey-Caruso Emotional Intelligence Test, EI: Emotional Intelligence

such a combined relationship. Analysis indicated that 10.4% of the variance between the predictor variables and EI could be explained by the model. The ANOVA revealed that the model was a significant fit for the data overall ($P = 0.007$).

The linear regression method for determining the ability of the variables to predict the total EI standard score revealed gender as a significant predictor. The ANOVA and Beta coefficients supported the significance of gender in predicting the total EI standard score ($t = 2.473$, $P < 0.015$). Furthermore, the data analysis revealed gender as a significance predictor on branch two, using emotions ($t = 2.00$, $P = 0.047$).

The data analysis from the linear stepwise regression method for determining the ability of the variables to predict the standard score on branch three, understanding emotions, revealed GPA ($t = 4.31$, $P < 0.001$) and gender ($t = 2.30$, $P < 0.023$) as significant predictors.

There were two branches of the MSCEIT that had no significant findings. The linear stepwise regression method for determining whether the independent variables of age, gender, GPA, years of healthcare experience prior to graduation, and years of experience as a RN could predict

EI for branches one and four, perceiving emotions and managing emotions, found no significant predictors among the variables.

Discussion

Study findings indicated that 80% of the participants demonstrated overall competence in EI. Of those scoring in the competent or higher range, nearly 16% scored above the average in the skilled range. The overall average total standard score on the MSCEIT was 99 which falls within the competent range of 90 to <110. A study conducted by Codier *et al.*^[6] also found the average total standard score of 193 clinical staff nurses to be 99. Freel^[25] conducted a study of 142 staff nurses and found their overall EI score to be slightly higher at 101.

The most troubling finding of this study was the percentage of nurses who did not score in the competent range or higher on the overall total score on the MSCEIT. Twenty percent, or 1 in 5 nurses who participated in this study, did not reach 90 or above on the total EI standard score. The participants in this study were exposed to the Benedictine values throughout their educational experience and it would be expected that these values, in combination with the nursing curriculum, would prepare a higher percentage of nursing alumni to meet competence levels. Codier^[26] also reported 37% of nurses in her study fell below the competent level on the total EI score. The results of this study indicate further research on EI in nurses should be explored to determine how to improve EI competence. Little research has been conducted on nurses' EI; hence, little is known about EI competence levels in the practicing nurse population.

Bulmer Smith *et al.*^[27] indicated there is substantial evidence for the need to deliberately include concepts of EI in nursing education. However, in the researcher's experience it is difficult to obtain support of faculty outside the mental health realm to add additional content to an already overcrowded curriculum. Codier^[26] concurs in finding that,

Table 3: MSCEIT standard score descriptive statistics for nurses with 1-2 and 3-5 years of experience

MSCEIT branch & total scores	Years of experience	n	Mean	SD	SE
Branch 1 perceiving emotions	1-2	65	100.43	10.91	1.35
	3-5	96	99.78	12.88	1.32
Branch 2 using emotions	1-2	65	97.01	12.08	1.50
	3-5	96	98.26	12.91	1.32
Branch 3 understanding emotions	1-2	65	98.40	9.11	1.13
	3-5	96	98.57	10.59	1.08
Branch 4 managing emotions	1-2	65	97.97	9.07	1.13
	3-5	96	98.38	10.85	1.11
Total EI score	1-2	65	98.97	9.88	1.23
	3-5	96	99.19	12.02	1.23

MSCEIT: Mayer-salovey-caruso emotional intelligence test, EI: Emotional Intelligence, SD: Standard deviation, SEM: Standard error of mean

Table 4: Mean differences comparisons between nurses with 1-2 and 3-5 years of experience

MSCEIT Branch & Total Scores	Levene's test for equality of variances		T-test for equality of means						
	F	Significant	t	df	Significant (two-tailed)	Mean difference	SE difference	95% CI of the difference	
								Lower	Upper
Branch 1 perceiving emotions	2.31	0.13	0.33	159	0.74	0.65	1.95	-3.20	4.50
Branch 2 using emotions	1.51	0.22	-0.62	159	0.54	-1.26	2.02	-5.25	2.73
Branch 3 understanding emotions	1.82	0.18	-0.10	159	0.92	-0.17	1.61	-3.35	3.01
Branch 4 managing emotions	0.20	0.66	-0.26	159	0.80	-0.42	1.63	-3.64	2.81
Total EI score	1.69	0.20	-0.12	159	0.90	-0.22	1.80	-3.78	3.33

EI: Emotional Intelligence, SE: Standard error, CI: Confidence interval, df: Degrees of freedom

Table 5: MSCEIT total and branch standard scores descriptive statistics

MSCEIT branch & total scores	Mean	SD	Minimum	Maximum	n
Branch 1 perceiving emotions	100.11	12.35	69.61	131.99	149
Branch 2 using emotions	97.77	12.83	65.82	128.49	149C
Branch 3 understanding emotions	98.64	9.88	74.08	118.81	149
Branch 4 managing emotions	97.97	10.21	54.58	118.91	149
Total EI score	99.08	11.39	64.49	128.81	149

MSCEIT: Mayer-salovey-caruso emotional intelligence test, EI: Emotional intelligence, SD: Standard deviation

overall, nursing curriculum is devoted to technical skills and very little, if any, content is focused on developing EI. The development of EI is critical in today's work environment that is increasingly stressed by shortages of staff, regulatory constraints, and demanding consumers. Students need the capability to handle the emotional nature of the profession in order to effectively care for patients and handle the practice environment.^[27] The challenges of the demanding work environment may affect development of nurses' EI.^[26,28] The inability to manage stress may be due to low EI, which may partially explain what contributed to the 20% of nurses in this study who didn't meet competence in overall EI scores.

Given the evidence that EI improves patient outcomes, the goal must be to prepare all baccalaureate nursing graduates to be competent in EI. Effective methods to assess this affective domain within nursing education also need further research and development. It is much more difficult to criticize a student's ability to demonstrate the affective behaviors of caring, empathy, ability to get along with others, teamwork and collaboration skills than it is to critically evaluate psychomotor and cognitive abilities. Nursing faculty have a difficult time critically assessing a student's lack of emotional competence. This difficulty may be due to faculty who also lack EI competence. Moreover, because nursing is a caring profession, faculty may have difficulty critiquing perceived ineffective caring behaviours in others.

Perceiving emotions

In this study, slightly over 80% of the participants scored in the competent range or higher on branch one (perceiving emotions) of the MSCEIT. Codier^[26] reported only 59% of the population in a study of clinical staff nurses scored in the competent range. All graduates of nursing programs must pass the NCLEX examination to obtain a license to practice; however, this examination is not intended to measure EI competence, and therefore there is no minimum standard measure to hold graduates accountable to in this area.

The average standard score in this study for branch one was 100.11, which was similar to other nursing studies.^[25,29] With one in five nurses in this study and two in five in Codier's^[26] study scoring less than competent on this branch score, much work needs to be done in developing self-awareness. When students discuss how they handled emotional situations during a postclinical conference and consider how they might do it similarly or differently in future situations, they develop self-awareness. It has been suggested that reflective journaling and mentoring within nursing experiences may facilitate the development of EI.^[10,15,28] Journaling about what is felt or perceived in an experience assists in developing self-awareness. One primary concern that may limit incorporating journaling as an assignment is that many faculty do not value this method of assessment, but rather prefer the more objective measures of critical thinking demonstrated through care plans and care mapping. Additionally, students may see this assignment as unnecessary paperwork that they don't perceive as beneficial. Faculty need to be educated on the value of measures that develop self-awareness so they will subsequently convey the importance on to students.

Key areas measured on branch one (perceiving emotions) of the MSCEIT include the ability to detect emotion in expressions and to distinguish sincerity of emotions.^[24,30] Of particular importance is the evidence that those who are able to convey their feelings adeptly are much better at demonstrating empathy toward others.^[31] The ability to convey empathy is paramount in a profession that must sensitively care for patients at some of their most vulnerable moments. Once again, stressful, chaotic work environments may interfere with development of this skill. Since many practicing nurses don't have adequate time to spend with patients in order to develop the caring and meaningful relationships that allow the exchange of emotion to be recognized, it is even more important that this skill be developed during the academic years.

Using emotions

Branch two scores for using emotions found only 72.7% of the participants in this study scoring in the competent or higher range. Codier's^[26] study had similar results with 74% scoring competent or higher on this branch of the MSCEIT. Reported averages on branch two of studies on nurses in practice were 97.77 in this study while other studies found slightly higher averages on this branch.^[25,30]

At the branch two level, Mayer and Salovey^[30] state that the ability to consider multiple points of view and to use emotions to facilitate thought are demonstrated.

Furthermore, they explain that moods have an impact on an individual's reasoning abilities and may influence problem-solving.^[24] Nurses with high EI levels create positive moods, which directly relate to the ability to provide improved services.^[32] Effective thinking within the context of highly charged emotional situations that nurses encounter is paramount for positive patient outcomes. Nurses must examine emotional information to understand the context of the patient's situation in order to make effective practice decisions.^[15,33,34] Because 27% of nurses participating in this study scored less than competent in the area of using emotions, measures need to be implemented to facilitate improvement. If faculty are competent in EI, the likelihood of their students being competent increases. Postclinical conferences might be an additional avenue during which scenarios can be discussed that exemplify how emotions were effectively used to problem solve.

Understanding emotions

In the current study, a greater percentage of the participants scored in the competent range or higher on branch three (understanding emotions) of the MSCEIT. Eighty four percent of nurses scored in the competent or higher range in understanding emotions and 89% scored similarly in Codier's^[26] study. The average standard score for this study was 98.64, which was slightly lower than the scores found in similar studies.^[25,29]

Development within branch three also includes the ability to understand complex feelings and the nature of changing emotions depending on circumstances.^[24,30] In healthcare, understanding the nature of changing emotions is critical. Nurses are expected to be sensitive to patient situations and demonstrate caring and empathy. Establishing caring relationships includes the ability to understand what patients are experiencing and is important for effectively promoting positive patient outcomes. Since 16% of the participants in this study did not meet competence levels, work remains in developing this ability. Development of this skill could be facilitated through effective mentoring by faculty and healthcare staff. As mentioned earlier, postclinical conferences that devote a portion of time to discussing how emotional patient situations were handled and how the situation was dealt with, effectively or not, could bring about an understanding of how emotions and effective care connect.

Managing emotions

Scores on the fourth and highest branch of the MSCEIT (managing emotions) identified that 84% of the participants in this study compared to 77% in Codier's^[26] study met

competence levels. The average standard score for managing emotions in the current study was 97.99, which, however, was lower than scores found in other studies.^[25,29] Managing emotions is the most complex branch in the hierarchical structure of Mayer and Salovey's theoretical model.^[30] Effective management of emotions allows the ability to disengage in stressful situations and process thoughts that allow appropriate response.^[35] Having the majority of nurses in this study meet the competence level in managing emotions demonstrates that they are capable of creating environments that are healing and compassionate. The concern at the managing emotions level is for the 16% who did not meet the competent level and may not be capable of managing emotions and tension in the work environment. Such lack of ability may lead to physical and mental burnout.^[4,14,36] Educational content on management of stress and conflict management is critical to future success of graduates and methods to foster this development are needed; however, as reported earlier, it is difficult for students to learn EI when many faculty do not have requisite EI to role model professional competence. Leadership in the practice environment can also mitigate stress and enable open communication in resolving conflict.

Findings in studies that analysed years of professional experience and EI had varied results. The present study findings were supported by findings of similar studies that found no association between EI and years of professional nursing practice^[37,38] and in contrast to findings by Benson *et al.*^[39] who reported EI was associated with years of professional nursing experience. Early years of professional nursing practice may not be the best time-frame to determine EI competency as many nurses are consumed with adjusting to the challenges of a chaotic acute care work environment. In addition, many of the values associated with EI competence may become engrained in nurses during early years of practice as they develop according to the role models and environment within which they practice. Additional research examining EI levels with a larger sample size over a longer period of time as well as a wider sample of Benedictine institutions beyond the three studied would expand the knowledge gained through this research study. Age did not emerge as a significant predictor in this study's participants as Salovey and Mayer's^[40] theory proposed, likely due to the average age of the participants being only 26 years old.

Studies comparing the EI levels of nursing students over their academic experience in a baccalaureate program found conflicting results. Benson *et al.*^[41] reported a statistically significant association between years in the program and higher EI functioning in one group of nursing students. In

contrast, Larin *et al.*^[42] found no significant changes in EI in nursing students from the beginning to the end of their 4 year undergraduate program. Shanta and Gargiulo^[16] and Shanta^[29] found no association in overall EI in groups of students beginning baccalaureate programs compared to students completing their baccalaureate program of study. If EI is deemed important and has direct linkages to improved patient outcomes as the literature suggests, it can't be emphasized enough that EI and methods to develop and assess EI must be valued by faculty and included within the curricular structure. Petrides and Sevdalis^[43] identified the need to research how nurses are able to manage emotions in self and others, how they convey empathy, and how effectively they manage conflict within a stressful work environment. Answers to these questions would provide helpful information to educators in terms of specific measures that would develop emotional competence in their students.

In this study being female was found to be a statistically significant factor ($P = 0.015$). This finding has been supported by theory and by results in numerous other studies.^[44-46] In contrast, no significant differences were found between male and female nurses in a study of EI in 98 mental health nurses^[47] and in a study on EI, caring, and generational differences in 442 clinical nurses employed on various units in acute care.^[37]

Overall implications of this finding for both education and practice must be viewed with caution. Given the need to avoid any gender discrimination, equal opportunities for development of EI should continue in curricula planning and professional development efforts. Jenkins^[48] suggested concentrating efforts into increasing EI competence in faculty which could potentially result in increasing all students' development of EI. Vandervoort^[49] states that faculty with high EI may be more likely to be nurturing and thus develop self-esteem in students who will be more active in their own learning. Considering the fact that all nurses could benefit from an increased emotional competence level, cultivation of an environment that fosters EI development in nurses would have a positive impact upon all sectors within the healthcare system.

In branch two of the MSCEIT (using emotions), being female once again was found to be a weak, yet statistically significant predictor ($P = 0.047$). Females in this study and others demonstrated they may be better able to consider multiple points of view in order to anticipate feelings related to life situations.^[50] Anticipating feelings is especially important in healthcare where rapidly changing patient conditions and major life-altering events occur. The

consideration of multiple points of view in anticipation of emotional reactions is necessary in establishing good working relationships within interprofessional teams and with patients.

Finally, GPA and being female were statistically significant predictors in branch three (understanding emotions), (GPA, $P < 0.000$) and (female $P < 0.023$). Participants in this study who had higher GPAs and were female scored higher on understanding emotions. This finding may be related to the role critical thinking plays due to the analytical process used to consider connections between thoughts and feelings.^[51] This level is associated with being able to understand complex emotions.^[35] Effectively understanding emotions assists with developing independent (between patient/family and the nurse) and collaborative (between the healthcare team and the nurse) relationships that are integral to promoting positive patient outcomes.^[52] GPA and being female have a positive association with EI in the theoretical model constructed by Mayer and Salovey;^[30] thus the correlations of these variables with EI in this study were not surprising. Nevertheless, due to conflicting findings of other research studies, further theory testing must be undertaken to determine whether the theory predictions hold true with nurses.

Consideration of gender for any type of practical implications must follow the same precautions identified earlier. In addition, because of the few numbers of male participants in this study, the statistical results should be interpreted with caution. The identification of GPA being a predictor of EI has implications for nursing programs and offers support for establishing and maintaining higher GPA admission and progression standards; however, results must be interpreted in light that GPA was self-disclosed. Until specific measures are empirically determined that improve EI, nursing programs may consider GPA as a benchmark for admitting students, knowing that higher GPAs are predictive of higher EI. However, caution is advised due to conflicting research findings, and further research studies with nurses is suggested to determine if results are consistent in finding GPA as a significant predictor of EI.

The participants in this study were nurses who graduated from three Benedictine institutions located in the Midwestern United States during the years 2007-2010. Findings are not generalizable beyond the population studied; however, findings provide information that expands knowledge regarding the EI levels of nurses. Additionally, since this was a convenience sample of graduates from the past 5 years, it is not known if EI would develop further over time.

The results provided empirical evidence that not all graduates from Benedictine institutions participating in this study were competent in EI even though the educational preparation at these institutions provided an environment where the values were consistent with and supported the development of EI. This is important because educational programs should prepare all graduates to be competent in EI. These findings have implications for education, practice and research. Codier^[26] and Beauvais *et al.*^[33] found a significant correlation between total EI and clinical practice. Nursing education must consider how to incorporate strategies within programs to cultivate EI development. The increasing complexity of the practice environment calls for increasing EI competence in nurses so as to establish effective relationships that support a culture of safety and facilitate positive patient outcomes. Nursing leadership in the practice arena should also consider how to foster the development of EI within all levels of nursing. Finally, continued research on the topic of EI and nursing is needed to build the knowledge base on how to promote positive patient outcomes.

Acknowledgements

This research was completed at North Dakota State University in partial fulfillment for the degree of Doctor of Philosophy. Special thanks extend to my dissertation Chair, Dr. Christopher Ray, for his guidance and support.

References

1. Institute of Medicine (US). *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: The National Academies Press; 2011.
2. Bianco C, Dudkiewicz PB, Linette D. Building nurse leader relationships. *Nurs Manage* 2014;45:42-8.
3. Morrison J. The relationship between emotional intelligence competencies and preferred conflict-handling styles. *J Nurs Manag* 2008;16:974-83.
4. Adamson E. Caring behaviour of nurses in Malaysia is influenced by spiritual and emotional intelligence, psychological ownership and burnout. *Evid Based Nurs* 2014;17:121.
5. Görgens-Ekermans G, Brand T. Emotional intelligence as a moderator in the stress-burnout relationship: A questionnaire study on nurses. *J Clin Nurs* 2012;21:2275-85.
6. Codier E, Kamikawa C, Kooker BM, Shoultz J. Emotional intelligence, performance, and retention in clinical staff nurses. *Nurs Adm Q* 2009;33:310-6.
7. Doas MD. What are the potential outcomes of integrating emotionally competent behaviours into the care of psychiatric patients? *J Psychiatr Ment Health Nurs* 2013;20:405-10.
8. Fernandez R, Salamonson Y, Griffiths R. Emotional intelligence as a predictor of academic performance in first-year accelerated graduate entry nursing students. *J Clin Nurs* 2012;21:3485-92.
9. Codier E, Muneno L, Franey K, Matsuura F. Is emotional intelligence an important concept for nursing practice? *Chiatr Ment Health Nurs* 2010;17:940-8.
10. Freshwater D, Stickley T. The heart of the art: Emotional intelligence in nurse education. *Nurs Inq* 2004;11:91-8.
11. Rochester S, Kilstoff K, Scott G. Learning from success: improving undergraduate education through understanding the capabilities of successful nurse graduates. *Nurse Educ Today* 2005;25:181-8.
12. Price B. The intelligent workforce. *Nurs Manag (Harrow)* 2008;15:28-33.
13. Codier E, Kooker BM, Shoultz J. Measuring the emotional intelligence of clinical staff nurses: an approach for improving the clinical care environment. *Nurs Adm Q* 2008;32:8-14.
14. Kaur D, Sambasivan M, Kumar N. Effect of spiritual intelligence, emotional intelligence, psychological ownership and burnout on caring behaviour of nurses: A cross-sectional study. *J Clin Nurs* 2013;22:3192-202.
15. Akerjordet K, Severinsson E. Emotional intelligence in mental health nurses talking about practice. *Int J Ment Health Nurs* 2004;13:164-70.
16. Shanta L, Gargiulo L. A study of the influence of nursing education on development of emotional intelligence. *J Prof Nurs* 2014;30:511-20.
17. Klassen J, Renner E, Reuter M. Catholic, Benedictine values in an educational environment; 2001. Available from: <http://www.osb.org/acad/benval1.html>. [Last accessed in 2014].
18. Association of Benedictine Colleges and Universities. *Education within the Benedictine Wisdom Tradition*; 2007. Available from: <http://www.umary.edu/pdflibrary/benedictinewisdomtradition.pdf>. [Last accessed in 2014].
19. The College of St. Scholastica. *Guiding Documents*; c2015. Available from: <http://www.css.edu/About/Leadership/Guiding-Documents.html>. [Last accessed in 2014].
20. The Order of St. Benedict, Inc. *The Rule of St. Benedict in English*. Collegeville, Minnesota: The Liturgical Press; 1981.
21. University of Mary. *Our mission: Our Benedictine values*; 2014. Available from: <http://www.umary.edu/about/mission/benedictinevalues.php>. [Last accessed in 2014].
22. Multi Health Systems, Inc. Consortium for research on emotional intelligence in organizations. Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT); 2010. Available from: <http://www.eiconsortium.org/measures/msceit.html>. [Last accessed in 2014].
23. Mayer J. *Emotional intelligence information: About the Mayer-Salovey-Caruso emotional intelligence tests — Interpreting and understanding MSCEIT scores*; 2012. Available from: http://www.unh.edu/emotional_intelligence/ei%20About%20the%20MSCEIT/eiMSCEIT%20Interpret.htm. [Last accessed in 2014].
24. Mayer J, Salovey P, Caruso D. *Mayer-Salovey-Caruso Emotional Intelligence Test. Technical Manual*. Toronto, Canada: Multi-Health Systems; 2002.
25. Freel M. *An exploratory study of emotional intelligence in clinical nurses [dissertation]*. Lincoln (NE): University of Nebraska; 2009.
26. Codier E. *The emotional intelligence of clinical staff nurses [dissertation]*. Manoa (HI): University of Hawaii; 2006.
27. Bulmer Smith K, Profetto-McGrath J, Cummings GG. Emotional intelligence and nursing: an integrative literature review. *Int J Nurs Stud* 2009;46:1624-36.

28. Akerjordet K, Severinsson E. Emotional intelligence: A review of the literature with specific focus on empirical and epistemological perspectives. *J Clin Nurs* 2007;16:1405-16.
29. Shanta L. A quasi-experimental study of the impact of nursing education on the development of emotional intelligence above the level acquired through general education [dissertation]. Cypress (CA): Touro University International; 2007.
30. Mayer J, Salovey P. What is emotional intelligence? In: Salovey P, Sluyter DJ, editors. *Emotional Development and Emotional Intelligence: Educational Implications*. New York: Basic Books; 1997. p. 3-31.
31. Mayer JD, DiPaolo M, Salovey P. Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. *J Pers Assess* 1990;54:772-81.
32. Ruiz-Aranda D, Extremera N, Pineda-Galán C. Emotional intelligence, life satisfaction and subjective happiness in female student health professionals: The mediating effect of perceived stress. *J Psychiatr Ment Health Nurs* 2014;21:106-13.
33. Beauvais AM, Brady N, O'Shea ER, Griffin MT. Emotional intelligence and nursing performance among nursing students. *Nurse Educ Today* 2011;31:396-401.
34. Kooker BM, Shoultz J, Codier EE. Identifying emotional intelligence in professional nursing practice. *J Prof Nurs* 2007;23:30-6.
35. Salovey P, Bedell B, Detweiler J, Mayer J. Coping intelligently: Emotional intelligence and the coping process. In: Snyder CR, editor. *Coping: The Psychology of What Works*. New York: Oxford University Press; 1999. p. 141-64.
36. Beauvais A. Build an instinct for feelings. *Nurs Stand* 2012;26:62-3.
37. Codier E, Freel M, Kamikawa C, Morrison P. Emotional intelligence, caring, and generational differences in nurses. *Int J Hum Caring* 2011;15:49-55.
38. Codier E, Kamikawa C, Kooker BM. The impact of emotional intelligence development on nurse managers. *Nurs Adm Q* 2011;35:270-6.
39. Benson G, Ploeg J, Brown B. A cross-sectional study of emotional intelligence in baccalaureate nursing students. *Nurse Educ Today* 2010;30:49-53.
40. Salovey P, Mayer J. Emotional intelligence. *Imagin Cogn Pers* 1990;9:185-211.
41. Benson G, Martin L, Ploeg J, Wessel J. Longitudinal study of emotional intelligence, leadership, and caring in undergraduate nursing students. *J Nurs Educ* 2012;51:95-101.
42. Larin HM, Benson G, Martin L, Wessel J, Williams R, Ploeg J. Examining change in emotional-social intelligence, caring, and leadership in health professions students. *J Allied Health* 2011;40:96-102.
43. Petrides KV, Sevdalis N. Emotional intelligence and nursing: Comment on Bulmer-Smith, Profetto-McGrath, and Cummings (2009). *Int J Nurs Stud* 2010;47:526-8.
44. Day A, Carroll S. Using an ability-based measure of emotional intelligence to predict individual performance, group performance, and group citizenship behaviours. *Pers Individ Dif* 2004;36:1443-59.
45. Palmer B, Gignac G, Manocha R, Stough C. A psychometric evaluation of the Mayer-Salovey-Caruso emotional intelligence test Version 2.0. *Intelligence* 2005;33:285-305.
46. Van Rooy D, Alonso A, Viswesvaran C. Group differences in emotional intelligence scores: theoretical and practical implications. *Pers Individ Dif* 2005;38:689-700.
47. van Dusseldorp LR, van Meijel BK, Derksen JJ. Emotional intelligence of mental health nurses. *J Clin Nurs* 2011;20:555-62.
48. Jenkins B. Emotional intelligence of faculty members, the learning environment, and empowerment of baccalaureate nursing students [dissertation]. New York (NY): Teachers College, Columbia University; 2006.
49. Vandervoort D. The importance of emotional intelligence in higher education. *Curr Psychol* 2006;25:4-7.
50. Mayer J, Salovey P, Caruso D. Emotional intelligence: Theory, findings, and implications. *Psychol Inq* 2004;15:197-215.
51. Elder L. Critical thinking: The key to emotional intelligence. *J Dev Educ* 1997;21:40.
52. Duffy JR, Hoskins LM. The Quality-Caring Model: blending dual paradigms. *ANS Adv Nurs Sci* 2003;26:77-88.

How to cite this article: Reemts GS. Emotional intelligence levels in baccalaureate-prepared early career registered nurses. *Asia Pac J Oncol Nurs* 2015;2:72-81.

Source of Support: Nil. **Conflict of Interest:** None declared.